



# FortiAnalyzer VM (Microsoft Hyper-V) Install Guide



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# Table of Contents

<b>Change Log .....</b>	<b>4</b>
<b>Introduction.....</b>	<b>5</b>
FortiAnalyzer documentation .....	5
<b>FortiAnalyzer VM Overview .....</b>	<b>6</b>
Licensing .....	6
System requirements .....	7
Register FortiAnalyzer VM with Customer Service & Support.....	7
Download the FortiAnalyzer VM software.....	11
FortiAnalyzer VM Evaluation license .....	14
<b>FortiAnalyzer VM Deployment.....</b>	<b>15</b>
Create the FortiAnalyzer VM virtual machine.....	15
Configure FortiAnalyzer VM hardware settings .....	19
FortiAnalyzer VM virtual processors .....	21
FortiAnalyzer VM network adapters.....	21
FortiAnalyzer VM virtual hard disk .....	22
Start the FortiAnalyzer VM .....	28
<b>FortiAnalyzer VM Initial Configuration.....</b>	<b>29</b>
FortiAnalyzer VM console access.....	29
Connect to the FortiAnalyzer VM Web-based Manager .....	30
Upload the FortiAnalyzer VM license file .....	31
Configure your FortiAnalyzer VM .....	33
<b>Product License Agreement.....</b>	<b>34</b>

# Change Log

Date	Change Description
2013-10-31	Initial release.
2014-02-06	Minor document update for v5.0.6. FortiAnalyzer VM now supports up to 12 virtual disks via the <code>execute lvm</code> CLI command.
2014-02-07	Updated the license code registration procedure to match changes to the Customer Service & Support portal.
2014-04-29	Updated instructions for adding a second virtual hard drive.
2014-12-05	Minor document update.

# Introduction

FortiAnalyzer platforms integrate network logging, analysis, and reporting into a single system, delivering increased knowledge of security events throughout your network. The FortiAnalyzer family minimizes the effort required to monitor and maintain acceptable use policies, as well as identify attack patterns to help you fine-tune your policies. Organizations of any size will benefit from centralized security event logging, forensic research, reporting, content archiving, data mining and malicious file quarantining.

FortiAnalyzer offers enterprise class features to identify threats, while providing the flexibility to evolve along with your ever-changing network. FortiAnalyzer can generate highly customized reports for your business requirements, while aggregating logs in a hierarchical, tiered logging topology.

You can deploy FortiAnalyzer physical or virtual appliances to collect, correlate, and analyze geographically and chronologically diverse security data. Aggregate alerts and log information from Fortinet appliances and third-party devices in a single location, providing a simplified, consolidated view of your security posture. In addition, FortiAnalyzer platforms provide detailed data capture for forensic purposes to comply with policies regarding privacy and disclosure of information security breaches.

This document includes the following sections:

- [FortiAnalyzer VM Overview](#)
- [FortiAnalyzer VM Deployment](#)
- [FortiAnalyzer VM Initial Configuration](#)

## FortiAnalyzer documentation

The following FortiAnalyzer product documentation is available:

- [\*FortiAnalyzer Administration Guide\*](#)  
This document describes how to set up the FortiAnalyzer system and use it with supported Fortinet units.
- [\*FortiAnalyzer device QuickStart Guides\*](#)  
These documents are included with your FortiAnalyzer system package. Use this document to install and begin working with the FortiAnalyzer system and Web-based Manager.
- [\*FortiAnalyzer Online Help\*](#)  
You can get online help from the FortiAnalyzer Web-based Manager. FortiAnalyzer online help contains detailed procedures for using the Web-based Manager to configure and manage FortiGate units.
- [\*FortiAnalyzer CLI Reference\*](#)  
This document describes how to use the FortiAnalyzer Command Line Interface (CLI) and contains references for all CLI commands.
- [\*FortiAnalyzer Release Notes\*](#)  
This document describes new features and enhancements in the FortiAnalyzer system for the release, and lists resolved and known issues. This document also defines supported platforms and firmware versions.

# FortiAnalyzer VM Overview

This section provides an overview of FortiAnalyzer VM for Microsoft Hyper-V Server 2008 R2 and 2012.

The following topics are included in this section:

- [Licensing](#)
- [System requirements](#)
- [Register FortiAnalyzer VM with Customer Service & Support](#)
- [Download the FortiAnalyzer VM software](#)
- [FortiAnalyzer VM Evaluation license](#)

## Licensing

Fortinet offers the FortiAnalyzer VM in a stackable license model based on GB logs per day and storage add-ons. This model allows you to expand your VM solution as your environment expands. When configuring your FortiAnalyzer VM, ensure to configure hardware settings as outlined in [Table 1](#) and consider future expansion.

**Table 1:** FortiAnalyzer VM license information

Technical Specification	VM-Base	VM-GB1	VM-GB5	VM-GB25	VM-GB100
Hypervisor Support	Microsoft Hyper-V Server 2008 R2 and 2012				
VM Form Factor	Microsoft Hyper-V Server: Virtual Hard Disk (VHD)				
Devices / ADOMs Supported	10,000				
Virtual CPUs (Minimum / Maximum)	1 / Unlimited				
Virtual Network Interfaces (Minimum / Maximum)	1 / 4				
Virtual Memory (Minimum / Maximum)	2GB / Unlimited The default memory size is 2GB				
Virtual Storage (Minimum)	40GB				
Device Quota	200GB	+200GB	+1TB	+8TB	+16TB
Sessions / Day	3.5 M	3.5 M	18 M	85 M	360 M

For more information, see the FortiAnalyzer product data sheet available on the Fortinet web site, <http://www.fortinet.com/sites/default/files/productdatasheets/FortiAnalyzer-VM.pdf>.

After placing an order for FortiAnalyzer VM, a license registration code is sent to the email address used in the order form. Use the license registration code provided to register the FortiAnalyzer VM with Customer Service & Support at <https://support.fortinet.com>.

Upon registration, you can download the license file. You will need this file to activate your FortiAnalyzer VM. You can configure basic network settings from the CLI to complete the deployment. Once the license file is uploaded, the CLI and Web-based Manager are fully functional.

## System requirements

Prior to deploying the FortiAnalyzer VM virtual appliance, Microsoft Hyper-V Server (2008 R2 or 2012) must be installed and configured. The installation instructions for FortiAnalyzer VM assume you are familiar with Microsoft Hyper-V server and terminology. For more details, refer to <http://www.microsoft.com/en-us/server-cloud/hyper-v-server/default.aspx>.

## Register FortiAnalyzer VM with Customer Service & Support

To obtain the FortiAnalyzer VM license file you must first register your FortiAnalyzer VM with Fortinet Customer Service & Support.

### To register your FortiAnalyzer VM:

1. Log in to the Fortinet Customer Service & Support portal using an existing support account or select *Create an Account* to create a new account.
2. In the toolbar select *Asset > Register/Renew*.

The *Registration Wizard* opens.

**Figure 1:** Registration Wizard

**FORTINET**  
CUSTOMER SERVICE & SUPPORT

Home Asset Assistance Download Feedback

User: User LOG OUT

Register/Renew Manage/View Products

Registration Wizard Registering Product

1 Registration Code > 2 > 3 > 4

Specify Registration Code

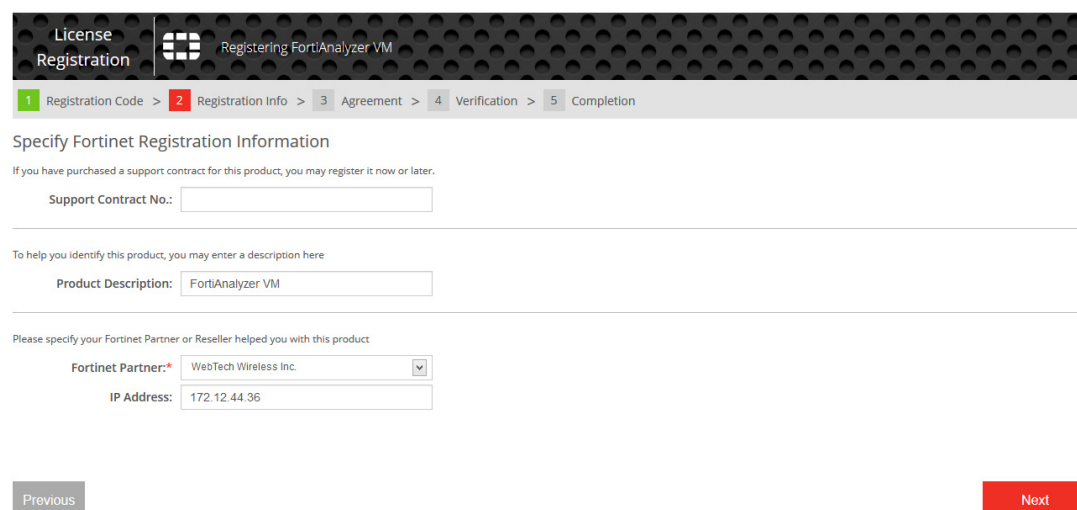
Please enter your product serial number, service contract registration code or license certificate number to start the registration:

GMER-Q-EXB-VT0F-CW615-PPLK-B

Next

3. Enter the license registration code from the FortiAnalyzer VM License Certificate that was emailed to you and select *Next*. The *Registration Info* page is displayed.

**Figure 2: Registration Info page**



4. Enter the support contract number, product description, Fortinet Partner, and IP address.



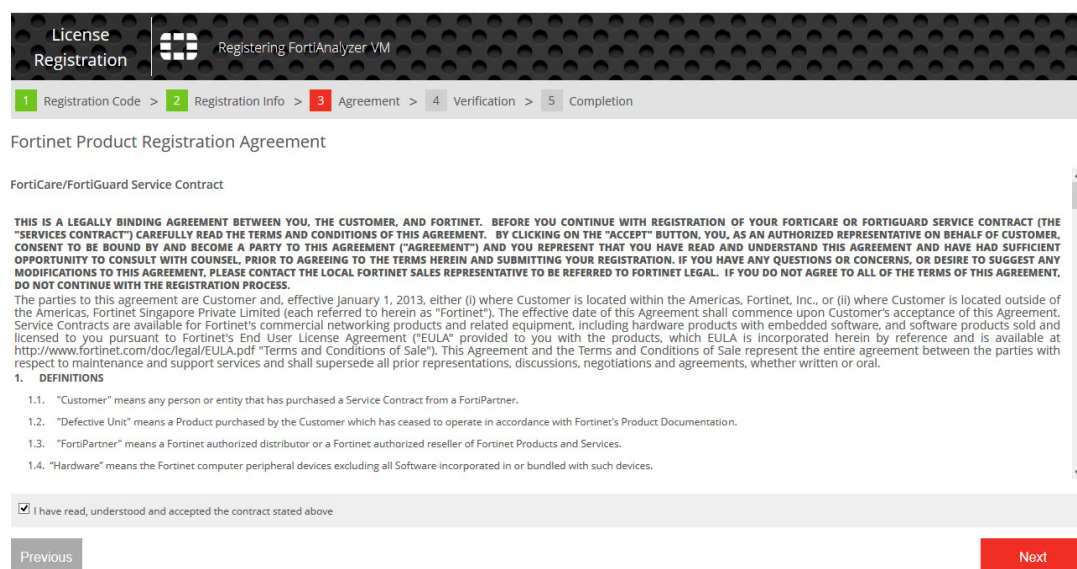
As a part of the license validation process FortiAnalyzer VM compares its IP address with the IP information in the license file. If a new license has been imported or the FortiAnalyzer VM's IP address has been changed, the FortiAnalyzer VM must be rebooted in order for the system to validate the change and operate with a valid license.



The [Customer Service & Support](#) portal currently does not support IPv6 for FortiAnalyzer VM license validation. You must specify an IPv4 address in both the support portal and the port management interface.

5. Select Next to continue. The *Fortinet Product Registration Agreement* page is displayed.

**Figure 3: Fortinet Product Registration Agreement**



6. Select the checkbox to indicate that you have read, understood, and accepted the service contract, and select Next to continue. The Verification page is displayed.



**Figure 4: Verification page**

The screenshot shows the 'License Registration' page for 'Registering FortiAnalyzer VM'. A progress bar at the top indicates five steps: 1. Registration Code, 2. Registration Info, 3. Agreement, 4. Verification (current step), and 5. Completion. The main content area is titled 'Verification' and includes an 'Important Notice' section with a red header. Below this, it states 'READ BEFORE COMPLETING THE REGISTRATION.' and 'Please verify the entitlement preview for and its associated services.' A 'Product Entitlement:' section follows, with a red header 'No Contract Term Detail information!'. It explains that entitlement calculation is based on existing warranty or contract services plus the term of the new contract, and provides a link for registration assistance. A checkbox is checked, with text stating: 'BY ACCEPTING THIS TERMS, YOU ARE ACTIVATING THIS SUPPORT CONTRACT AND THE ENTITLEMENT PERIOD PROVIDED CAN NOT BE CHANGED. IF YOU WISH TO CONTINUE, CLICK "Confirm" BUTTON TO SUBMIT YOUR REQUEST.' At the bottom, there are two buttons: 'Previous' (disabled) and 'Confirm' (active).

7. The verification page displays the product entitlement. Select the checkbox to indicate that you accept the terms and select *Confirm* to submit the request. The *Registration Completed* page is displayed.

**Figure 5: Registration Completed page**

The screenshot shows the 'License Registration' page for 'Registering FortiAnalyzer VM'. The progress bar at the top shows five steps: 1. Registration Code, 2. Registration Info, 3. Agreement, 4. Verification, and 5. Completion (current step). The main content area is titled 'Registration Completed' and includes a message: 'Thank you for choosing Fortinet product. Your registration process has successfully completed. Please be aware that the registration information may not reflect on your product immediately, a delay (up to 4 hours) can occur.' Below this is a 'Product Info' section with a 'General' tab. It displays the following information: Product Model: FortiAnalyzer VM, Serial Number: FAZ-VM00000, License Number: FLVMS00, GB Logs/Day: 1, Registration Date: 2014-02-07, Description: FortiAnalyzer VM, Partner: WebTech Wireless Inc., IP Address: 172.12.44.36, and License File: License File Download(v4.3.7 or newer) and License File Download(v5.x). Below the 'Product Info' section is a 'Support Coverage' section with a red header 'No service coverage!'. At the bottom, there are two buttons: 'Register More' (disabled) and 'Finish' (active).

8. In the *Registration Completed* page you can download the FortiAnalyzer VM license file. Select the *License File Download* link. You will be prompted to save the license file (.lic) to your management computer. See “[Upload the FortiAnalyzer VM license file](#)” on page 31 for instructions on uploading the license file to your FortiAnalyzer VM via the Web-based Manager.

**To edit the FortiAnalyzer VM IP address:**

1. In the toolbar select *Asset > Manage/View Products*.  
The View Products page opens.

**Figure 6:** View Products page

Serial Number	Description	Ship Date	Registration Date
FAZ-VM0000010996	FortiAnalyzer VM		2014-02-07

- 2. Select the FortiAnalyzer VM serial number.  
The *Product Details* page opens.

**Figure 7:** Product Details page

Product Details

FortiAnalyzer VM

FAZ-VM00000

Back To List

Information

- General
- Location
- Entitlement
- License

Registration

- Renew Contract

Assistance

- Ticket List
- Technical Request
- Customer Service
- DOA Request
- RMA Request
- WebChat

Product Info

General

Product Model: FortiAnalyzer VM

Serial Number: FAZ-VM00000

License Number: FLVM500

GB Logs/Day: 1

Registration Date: 2014-02-07

Description: FortiAnalyzer VM

Partner: WebTech Wireless Inc.

IP Address: 172.12.44.36

License File: [License File Download\(v4.3.7 or newer\)](#)  
[License File Download\(v5.x\)](#)

Edit

- 3. Select *Edit* to change the description, partner information, and IP address of your FortiAnalyzer VM.  
The *Edit Product Info* page opens.

**Figure 8:** Edit Product Info page

Product Details FortiAnalyzer VM FAZ-VM00000

Back To List

Information

- General
- Location
- Entitlement
- License

Registration

- Renew Contract

Assistance

- Ticket List
- Technical Request
- Customer Service
- DOA Request
- RMA Request
- WebChat

Edit Product Info

Description: FortiAnalyzer VM

Partner Info: WebTech Wireless Inc.

IP Address: 172.12.44.36

You can update IP address for 5 time(s).

Save Cancel

4. Enter the new IP address and select Save.



You can change the IP address five (5) times on a regular FortiAnalyzer VM license. There is no restriction on a full evaluation license.

5. Select the *License File Download* link. You will be prompted to save the license file (.lic) to your management computer. See “[Upload the FortiAnalyzer VM license file](#)” on page 31 for instructions on uploading the license file to your FortiAnalyzer VM via the Web-based Manager.

## Download the FortiAnalyzer VM software

Fortinet provides the FortiAnalyzer VM software for Hyper-V environments in two formats:

- FAZ\_VM64\_HV-v500-build0xxx-FORTINET.out: Download this firmware image to upgrade your existing FortiAnalyzer VM installation.
- FAZ\_VM64\_HV-v500-build0xxx-FORTINET.out.hyperv.zip: Download this package for a new FortiAnalyzer VM installation.

The FAZ\_VM64\_HV-v500-build0xxx-FORTINET.out.hyperv.zip file folder contains the following file:

- faz.vhd: Virtual hard disk (VHD) format file.

Firmware images in the [Customer Service & Support](#) portal directories are organized by firmware version, major release, and patch release. FortiAnalyzer VM image for Microsoft Hyper-V are identified by the `_HV` in the image name. The firmware images in the directories follow a specific naming convention and each firmware image is specific to the device model. For example, the `FAZ_VM64_HV-v500-build0618-FORTINET.out.hyperv.zip` image found in the `v5.2.0` directory is specific to the FortiAnalyzer VM Microsoft Hyper-V server environment.



You can also download the [FortiAnalyzer Release Notes](#), and MIB file in this directory. The Fortinet Core MIB file is located in the main FortiAnalyzer v5.00 directory.

### To download the FortiAnalyzer VM .hyperv.zip package:

1. In the toolbar, select *Download* > *Firmware Images*.

The *Firmware Images* page opens.

**Figure 9:** Firmware images page

Firmware Images | Fortinet Firmware Images And Software Releases

Welcome to the Firmware Images download center for Fortinet's extensive line of security solutions.

Select Product

FortiAnalyzer

Release Notes | Download

Downloading via FTP is not secure, HTTPS is recommended. Please always verify your image by checksum code before installation. In case your browser has problem to show below content, click [here](#).

Image File Path

/ [FortiAnalyzer/ v5.00/ 5.2/](#)

Image Folders/Files

[Up to higher level directory](#)





















	Name	Size (KB)	Date Created	Date Modified
	5.2.0	Directory	2014-09-04 16:09:00	2014-09-04 16:09:00

2. Select *FortiAnalyzer* from the drop-down list and select *Download*.
3. Browse to the appropriate directory for the version that you would like to download.

**Figure 10:**Directory example

Image Folders/Files

[Up to higher level directory](#)

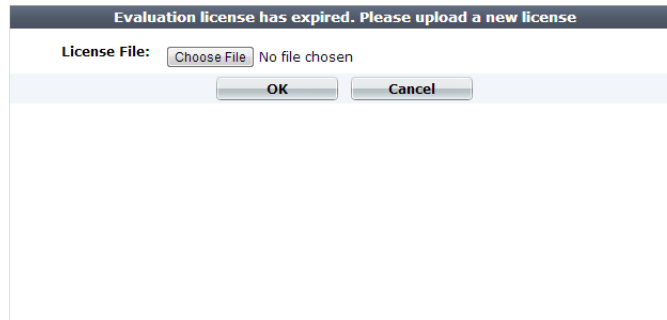
Name	Size (KB)	Date Created	Date Modified			
 FAZ_1000C-v500-build0618-FORTINET.out	52,151	2014-08-26 18:08:06	2014-08-26 18:08:06	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FAZ_1000D-v500-build0618-FORTINET.out	52,817	2014-08-26 18:08:02	2014-08-26 18:08:02	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FAZ_100C-v500-build0618-FORTINET.out	50,500	2014-08-26 18:08:21	2014-08-26 18:08:21	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FAZ_2000B-v500-build0618-FORTINET.out	52,219	2014-09-04 16:09:04	2014-09-04 16:09:04	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FAZ_200D-v500-build0618-FORTINET.out	51,590	2014-08-26 18:08:17	2014-08-26 18:08:17	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FAZ_3000D-v500-build0618-FORTINET.out	53,001	2014-08-26 18:08:58	2014-08-26 18:08:58	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FAZ_3000E-v500-build0618-FORTINET.out	52,883	2014-08-26 18:08:54	2014-08-26 18:08:54	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FAZ_300D-v500-build0618-FORTINET.out	51,279	2014-08-26 18:08:14	2014-08-26 18:08:14	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FAZ_3500E-v500-build0618-FORTINET.out	53,008	2014-08-26 18:08:51	2014-08-26 18:08:51	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FAZ_4000B-v500-build0618-FORTINET.out	52,218	2014-08-26 18:08:47	2014-08-26 18:08:47	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FAZ_400C-v500-build0618-FORTINET.out	51,218	2014-08-26 18:08:10	2014-08-26 18:08:10	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FAZ_VM32-v500-build0618-FORTINET.out	52,444	2014-08-26 18:08:43	2014-08-26 18:08:43	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FAZ_VM32-v500-build0618-FORTINET.out.ovf.zip	51,074	2014-08-26 18:08:39	2014-08-26 18:08:39	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FAZ_VM64-v500-build0618-FORTINET.out	52,919	2014-08-26 18:08:32	2014-08-26 18:08:32	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FAZ_VM64_HV-v500-build0618-FORTINET.out.hyperv.zip	51,508	2014-08-26 18:08:36	2014-08-26 18:08:36	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FAZ_VM64-v500-build0618-FORTINET.out	53,332	2014-08-26 18:08:28	2014-08-26 18:08:28	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FAZ_VM64-v500-build0618-FORTINET.out.ovf.zip	51,965	2014-08-26 18:08:24	2014-08-26 18:08:24	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 fortianalyzer-v5.2.0-release-notes.pdf	191	2014-09-09 17:09:16	2014-09-09 17:09:16	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 fortianalyzer-v5.2.0-upgrade-guide.pdf	822	2014-09-04 16:09:37	2014-09-04 16:09:37	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>
 FORTINET-FORTIMANAGER-FORTIANALYZER-MIB.mib	17	2014-08-26 18:08:59	2014-08-26 18:08:59	<a href="#">HTTPS</a>	<a href="#">FTP</a>	<a href="#">Checksum</a>

4. Download the `.hyperv.zip` file and *FortiAnalyzer Release Notes*, and save these files to your management computer.
5. Select the `.hyperv.zip` file on your management computer and extract the files to a new file folder. See “[Create the FortiAnalyzer VM virtual machine](#)” on page 15 for information on deploying the VHD file to your Hyper-V server environment.

## FortiAnalyzer VM Evaluation license

FortiAnalyzer VM includes a free 15-day trial license that includes all features. No activation is required for the built-in evaluation license. The trial period begins the first time you start FortiAnalyzer VM. Once the trial expires, functionality is disabled until you upload a license file.

**Figure 11:**Expired license dialog box



Technical support is not included with the 15-day evaluation.



Contact your Fortinet Reseller to request a full evaluation (60-days) FortiAnalyzer VM license.

# FortiAnalyzer VM Deployment

Once you have downloaded the `.hyperv.zip` file and extracted the package contents to a folder on your Microsoft server, you can deploy the VHD package to your Microsoft Hyper-V environment.

The following topics are included in this section:

- Create the FortiAnalyzer VM virtual machine
- Configure FortiAnalyzer VM hardware settings
- Start the FortiAnalyzer VM

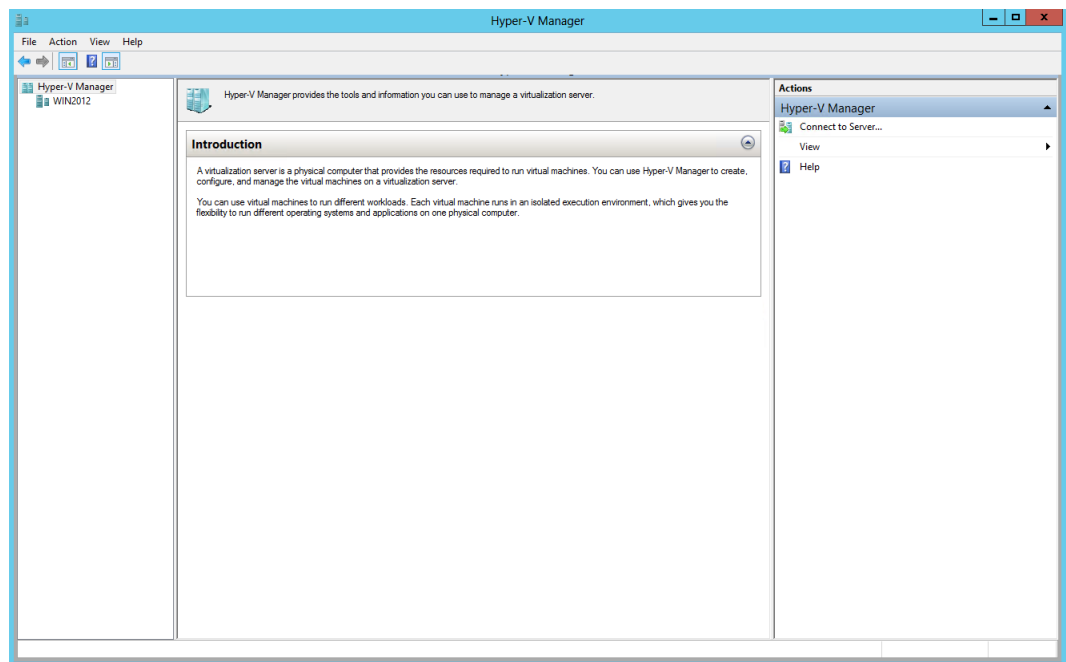
## Create the FortiAnalyzer VM virtual machine

**To create the FortiAnalyzer VM virtual machine:**

1. Launch the Hyper-V Manager in your Microsoft server.

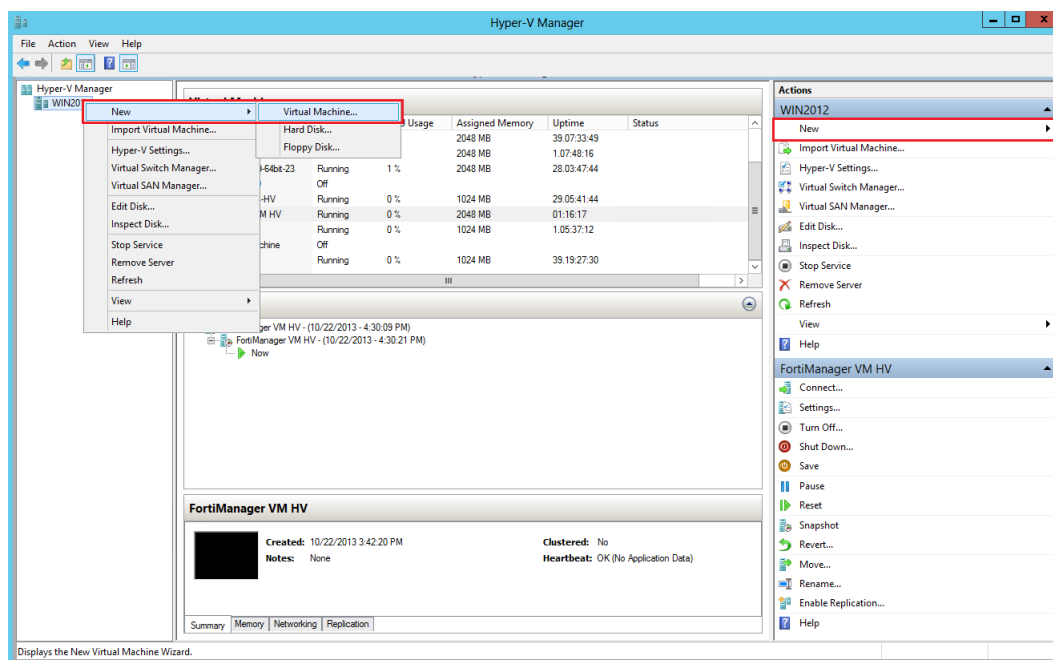
The *Hyper-V Manager* home page opens.

**Figure 12:**Hyper-V Manager home page



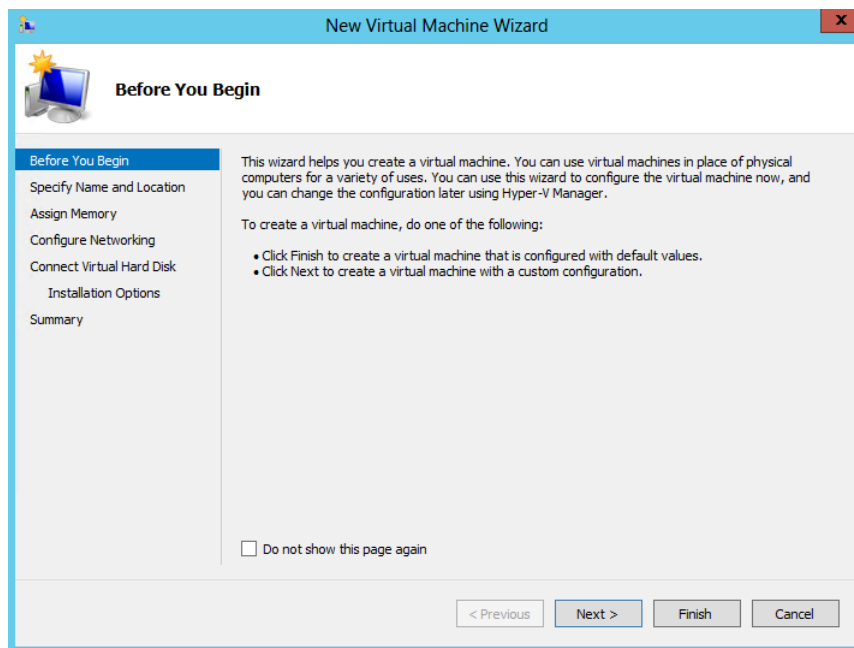
2. Select the server in the right-tree menu. The server details page is displayed.

**Figure 13:**Server page



3. Right-click the server and select **New** and select *Virtual Machine* from the menu. Optionally, in the *Actions* menu, select **New** and select *Virtual Machine* from the menu.  
The *New Virtual Machine Wizard* opens.

**Figure 14:**New Virtual Machine Wizard



4. Select **Next** to create a virtual machine with a custom configuration.  
The *Specify Name and Location* page is displayed.



**Figure 15:**Specify Name and Location page

The screenshot shows the 'Specify Name and Location' page of the 'New Virtual Machine Wizard'. The left sidebar contains a list of steps: 'Before You Begin', 'Specify Name and Location' (highlighted), 'Assign Memory', 'Configure Networking', 'Connect Virtual Hard Disk', 'Installation Options', and 'Summary'. The main area has the title 'Specify Name and Location' and a sub-header 'Choose a name and location for this virtual machine.' Below this, it states: 'The name is displayed in Hyper-V Manager. We recommend that you use a name that helps you easily identify this virtual machine, such as the name of the guest operating system or workload.' There is a text input field for 'Name' containing 'FortiAnalyzer VM HV'. Below that, it says: 'You can create a folder or use an existing folder to store the virtual machine. If you don't select a folder, the virtual machine is stored in the default folder configured for this server.' There is a checkbox labeled 'Store the virtual machine in a different location' which is currently unchecked. Below the checkbox is a text input field for 'Location' containing 'C:\ProgramData\Microsoft\Windows\Hyper-V\' and a 'Browse...' button. At the bottom, there is a warning icon and text: 'If you plan to take snapshots of this virtual machine, select a location that has enough free space. Snapshots include virtual machine data and may require a large amount of space.' The bottom of the window has four buttons: '< Previous', 'Next >', 'Finish', and 'Cancel'.

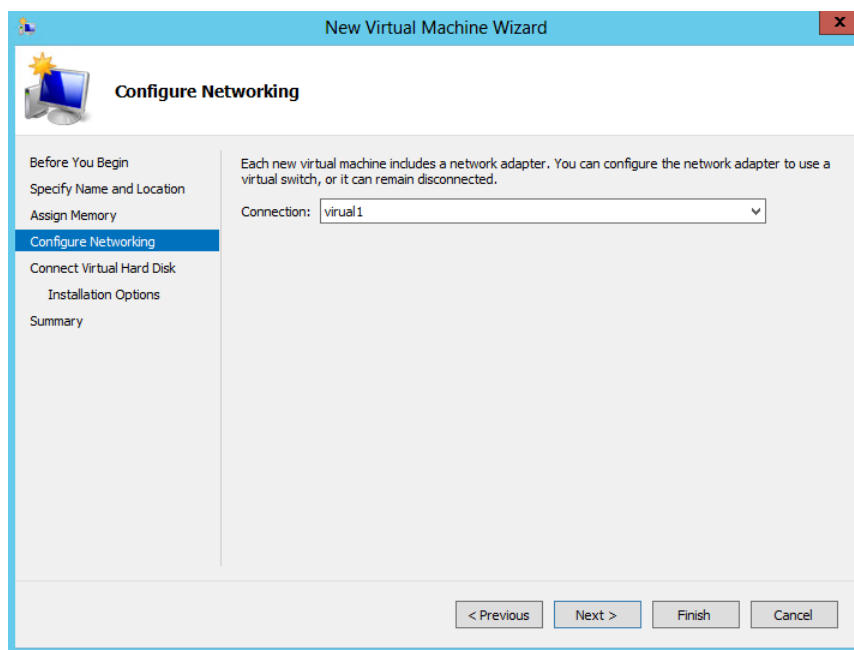
5. Enter a name for this virtual machine. The name is displayed in the Hyper-V Manager. Select *Next* to continue. The *Assign Memory* page is displayed.

**Figure 16:**Assign Memory page

The screenshot shows the 'Assign Memory' page of the 'New Virtual Machine Wizard'. The left sidebar contains a list of steps: 'Before You Begin', 'Specify Name and Location', 'Assign Memory' (highlighted), 'Configure Networking', 'Connect Virtual Hard Disk', 'Installation Options', and 'Summary'. The main area has the title 'Assign Memory' and a sub-header 'Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 8 MB through 14100 MB. To improve performance, specify more than the minimum amount recommended for the operating system.' Below this, there is a text input field for 'Startup memory:' containing '2048' and 'MB'. Below that, there is a checkbox labeled 'Use Dynamic Memory for this virtual machine.' which is currently unchecked. At the bottom, there is an information icon and text: 'When you decide how much memory to assign to a virtual machine, consider how you intend to use the virtual machine and the operating system that it will run.' The bottom of the window has four buttons: '< Previous', 'Next >', 'Finish', and 'Cancel'.

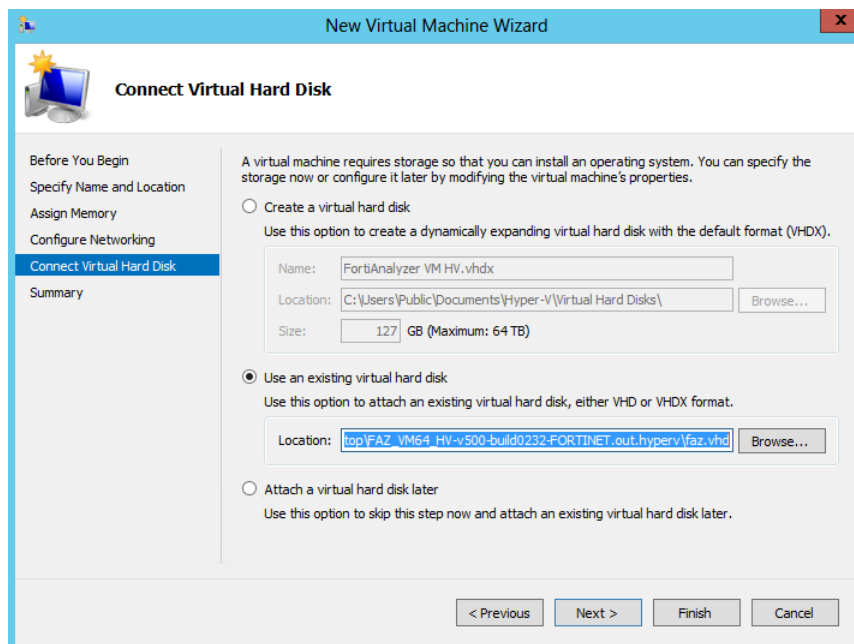
6. Specify the amount of memory to allocate to this virtual machine. The default memory for FortiAnalyzer VM is 2GB (2048MB). Select *Next* to continue. The *Configure Networking* page is displayed.

**Figure 17:**Configure Networking page



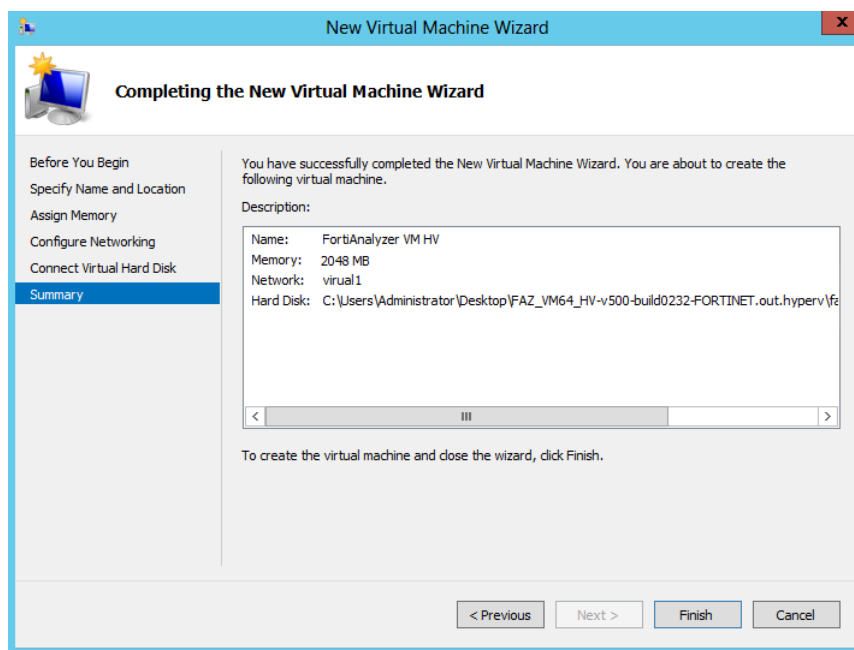
7. Each new virtual machine includes a network adapter. You can configure the network adapter to use a virtual switch, or it can remain disconnected. FortiAnalyzer VM requires four network adapters. You must configure network adapters in the *Settings* page. Select *Next* to continue. The *Connect Virtual Hard Disk* page is displayed.

**Figure 18:**Connect Virtual Hard Disk page



8. Select to use an existing virtual hard disk and browse for the `fmgr.vhd` file that you downloaded from the [Fortinet Customer Service & Support portal](#). Select *Next* to continue. The *Summary* page is displayed.

**Figure 19:**Summary page



9. To create the virtual machine and close the wizard, select *Finish*.

## Configure FortiAnalyzer VM hardware settings

Before powering on your FortiAnalyzer VM you must configure the virtual CPU, and create network adapters and virtual disk configuration to match your FortiAnalyzer VM license. See [“FortiAnalyzer VM VM license information”](#) on page 6 for FortiAnalyzer VM license information.

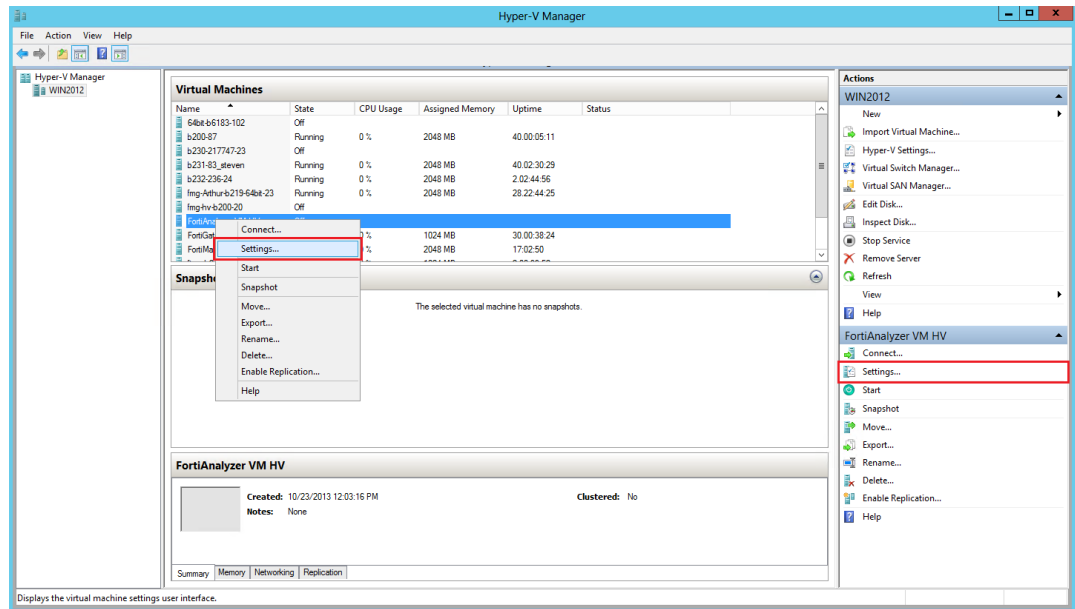


It is recommended to configure the FortiAnalyzer VM hardware settings prior to powering on the FortiAnalyzer VM.

### To configure settings for FortiAnalyzer VM on the server:

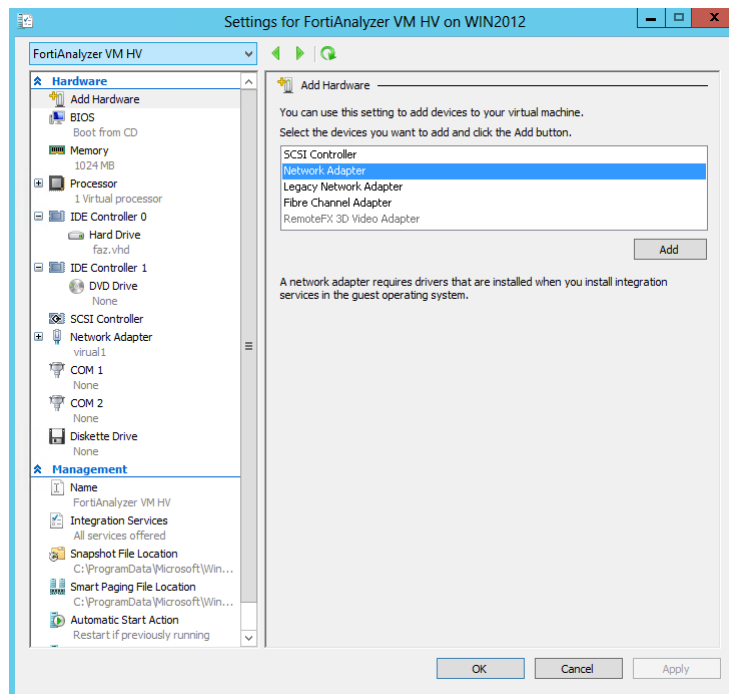
1. In the Hyper-V Manager, locate the name of the virtual machine, right-click the entry, and select *Settings* from the menu. Optionally, you can select the virtual machine and select *Settings* in the *Actions* menu.

**Figure 20:**Hyper-V Manager



The *Settings* page is displayed.

**Figure 21:**Settings page



2. Configure virtual processors, network adapters, and virtual hard drive settings.
3. Select *Apply* to save the settings and then select *OK* to close the settings page.

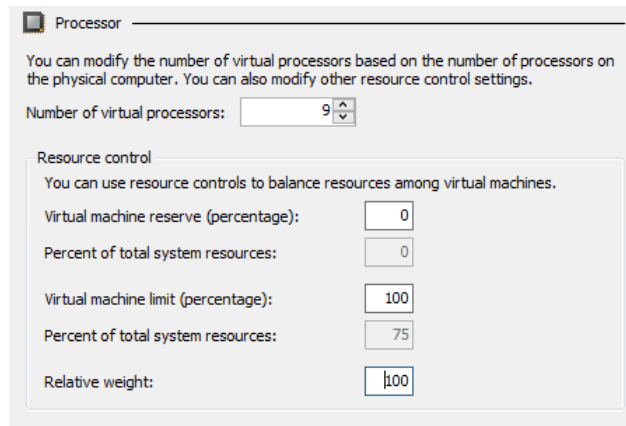
## FortiAnalyzer VM virtual processors

You must configure FortiAnalyzer VM virtual processors in the server settings page. The number of processors is dependent on your server environment.

### Configure FortiAnalyzer VM virtual processors:

1. In the *Settings* page, select *Processor* from the *Hardware* menu.  
The *Processor* page is displayed.

**Figure 22:**Processor page



The screenshot shows the 'Processor' configuration page in the FortiAnalyzer VM settings. At the top, there is a title bar with a processor icon and the word 'Processor'. Below the title bar, a text box explains: 'You can modify the number of virtual processors based on the number of processors on the physical computer. You can also modify other resource control settings.' Below this text, there is a label 'Number of virtual processors:' followed by a text input field containing the number '9' and a small up/down arrow icon. Below this, there is a section titled 'Resource control' with a sub-header 'You can use resource controls to balance resources among virtual machines.' This section contains five rows of settings, each with a label and a text input field: 'Virtual machine reserve (percentage):' with '0', 'Percent of total system resources:' with '0', 'Virtual machine limit (percentage):' with '100', 'Percent of total system resources:' with '75', and 'Relative weight:' with '100'.

Setting	Value
Number of virtual processors	9
Virtual machine reserve (percentage)	0
Percent of total system resources	0
Virtual machine limit (percentage)	100
Percent of total system resources	75
Relative weight	100

2. Configure the number of virtual processors for the FortiAnalyzer VM virtual machine.  
Optionally, you can use resource controls to balance resources among virtual machines.
3. Select *Apply* to save the settings.

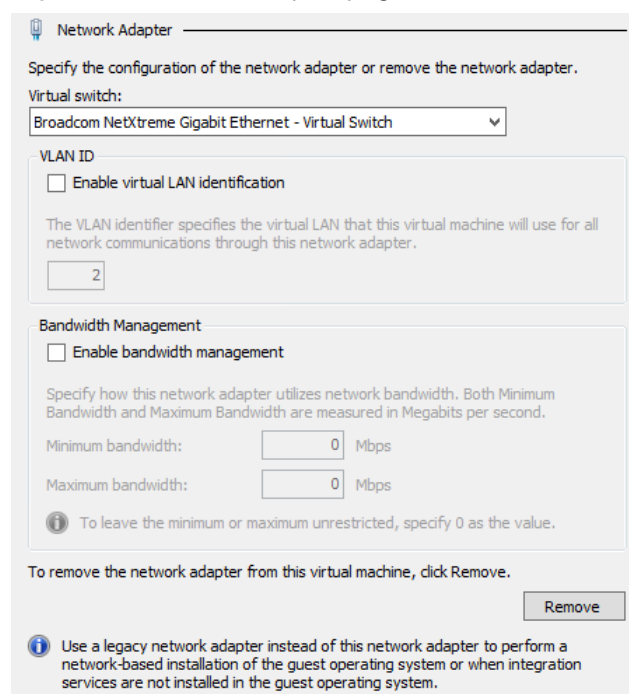
## FortiAnalyzer VM network adapters

You must configure FortiAnalyzer VM network adapters in the server settings page. FortiAnalyzer VM supports four network adapters.

### Configure FortiAnalyzer VM network adapters:

1. In the *Settings* page, select *Add Hardware* from the *Hardware* menu, select *Network Adapter* in the device list, and select the *Add* button.  
The *Network Adapter* page is displayed.

**Figure 23:**Network Adapter page



The screenshot shows the 'Network Adapter' configuration page. At the top, it says 'Specify the configuration of the network adapter or remove the network adapter.' Below this is a 'Virtual switch:' dropdown menu with 'Broadcom NetXtreme Gigabit Ethernet - Virtual Switch' selected. Under 'VLAN ID', there is a checkbox for 'Enable virtual LAN identification' which is unchecked, and a text box containing the number '2'. Below that is a 'Bandwidth Management' section with a checkbox for 'Enable bandwidth management' which is also unchecked. It includes instructions to specify minimum and maximum bandwidth in Mbps, with input boxes both set to '0'. A note at the bottom of this section says 'To leave the minimum or maximum unrestricted, specify 0 as the value.' At the very bottom, there is a 'Remove' button and a note: 'To remove the network adapter from this virtual machine, click Remove.' and a tip: 'Use a legacy network adapter instead of this network adapter to perform a network-based installation of the guest operating system or when integration services are not installed in the guest operating system.'

2. You must manually configure four network adapters for FortiAnalyzer VM in the settings page. For each network adapter, select the virtual switch from the drop-down list.
3. Select *Apply* to save the settings.

## FortiAnalyzer VM virtual hard disk

You must configure the FortiAnalyzer VM virtual hard disk in the server settings page.



FortiAnalyzer VM requires at least two virtual hard disks. Before powering on the FortiAnalyzer VM, you need to add at least one more virtual hard disk. The default hard drive, `faz.vhd`, contains the operating system. The second hard drive will be used for logs.



If you know your environment will expand in the future, it is recommended to add hard disks larger than the 200GB FortiAnalyzer VM base license requirement. This will allow your environment to be expanded as required while not taking up more space in the SAN than is needed.



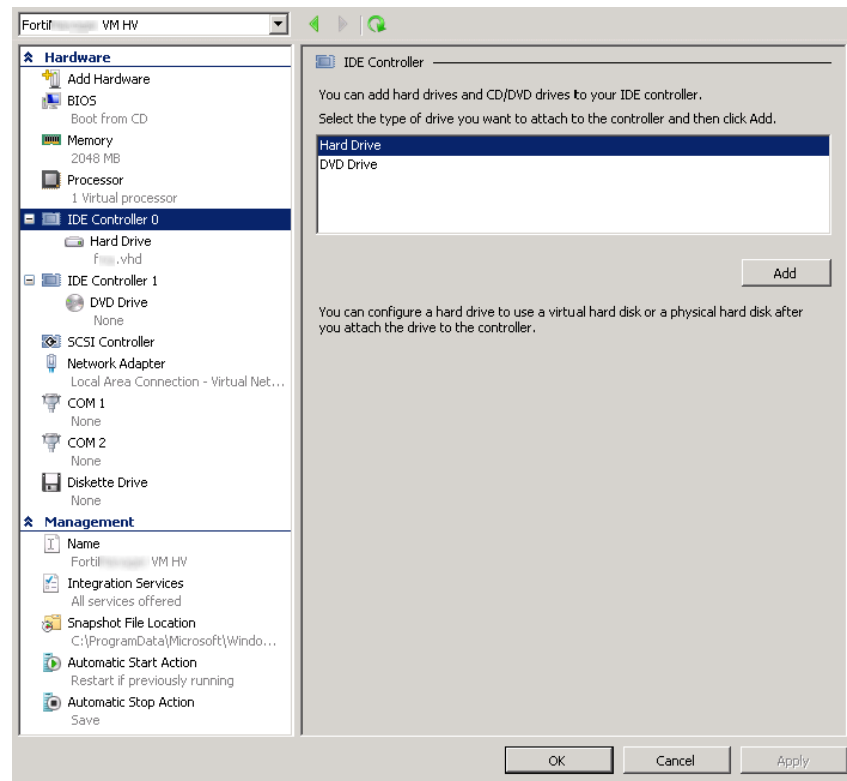
FortiAnalyzer VM allows for twelve virtual log disks to be added to a deployed instance. When adding additional hard disks to your FortiAnalyzer VM use the following CLI command to extend the LVM logical volume:

```
execute lvm start
execute lvm extend <arg >..>
```

## Create a FortiAnalyzer VM virtual hard drive:

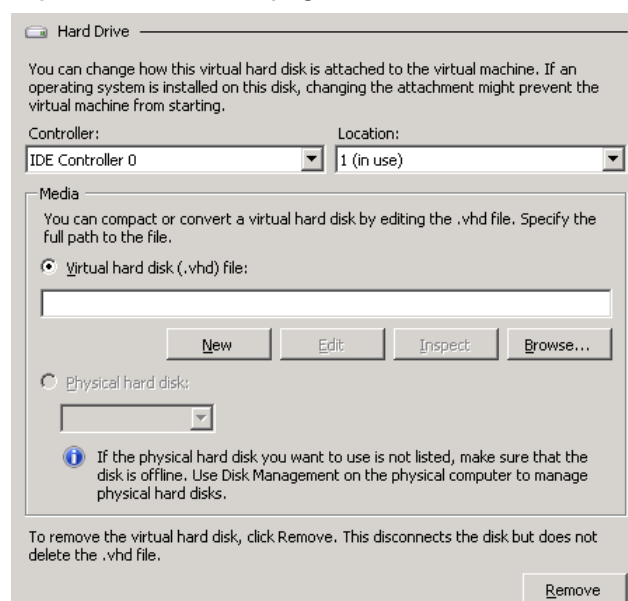
1. In the *Settings* page, select *IDE Controller 0* from the *Hardware* menu.

**Figure 24:**Settings page



2. Select the type of drive you want to attach to the controller and then select *Add*.  
The *Hard Drive* page is displayed.

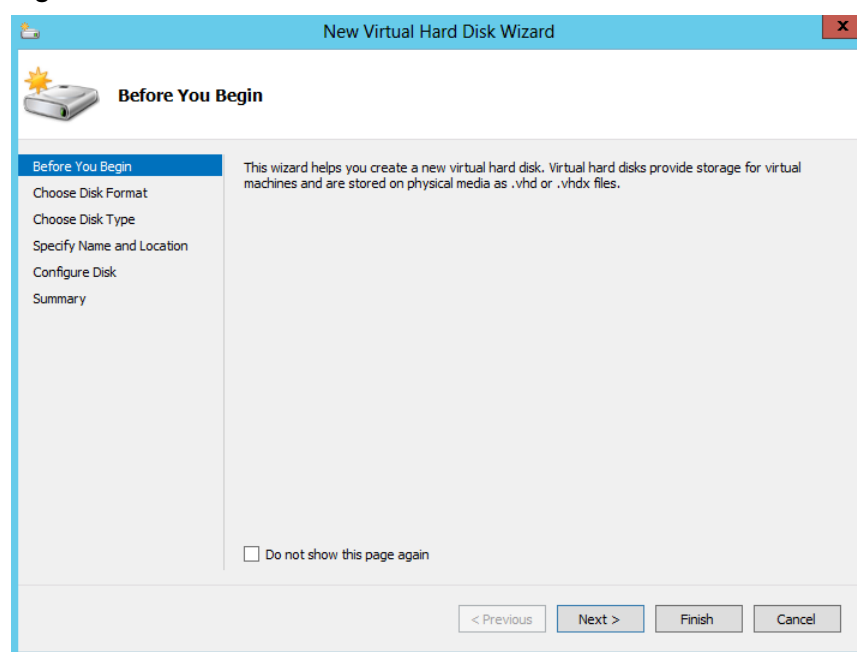
**Figure 25:**Hard Drive page



3. Select **New** to create a new virtual hard disk.

The *New Virtual Hard Disk Wizard* opens.

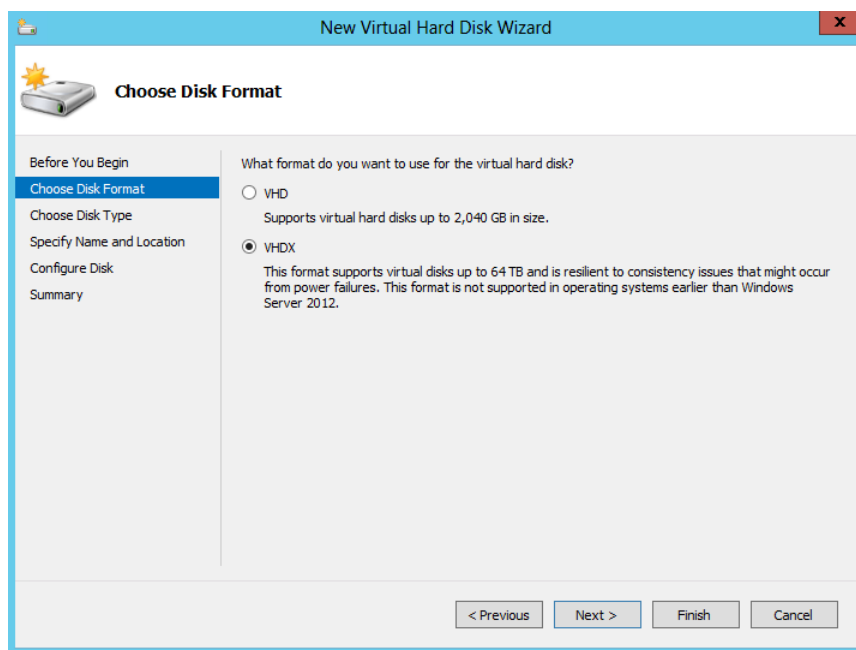
**Figure 26:**New Virtual Hard Disk Wizard



4. This wizard helps you to create a new virtual hard disk.  
Select **Next** to continue. The *Choose Disk Format* page opens.



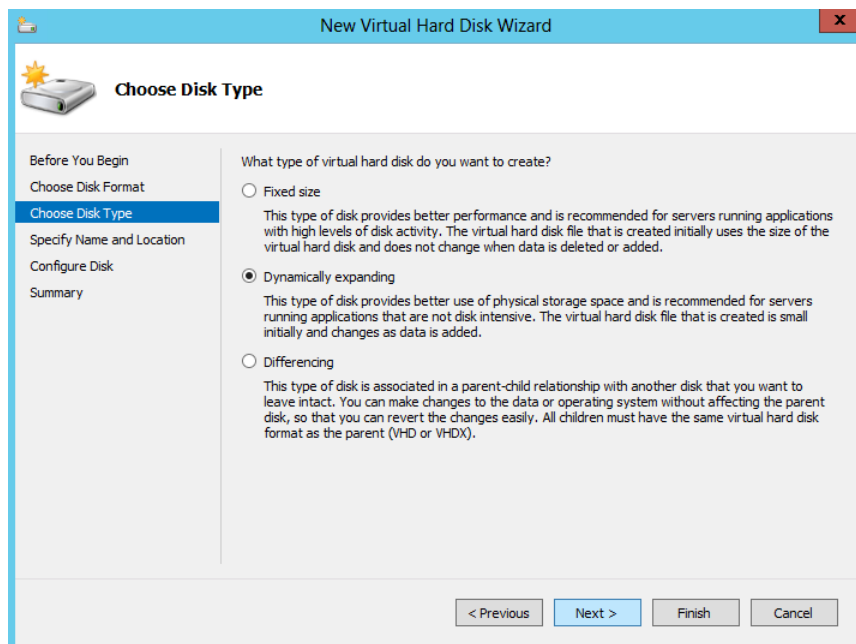
**Figure 27:**Choose Disk Format page



5. Select to use VHDX format virtual hard disks. This format supports virtual disks up to 64TB and is resilient to consistency issues that might occur from power failures. This format is not supported in operating systems earlier that Windows Server 2012.

Select *Next* to continue. The *Choose Disk Type* page opens.

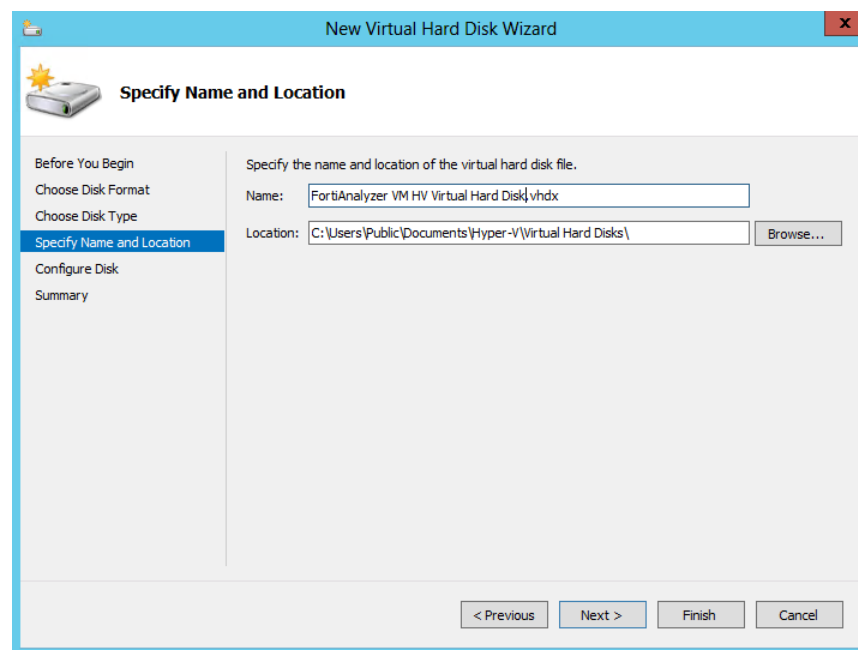
**Figure 28:**Choose Disk Type page



6. Select the type of virtual disk you want to use. Select one of the following disk types:
- Fixed size: This type of disk provides better performance and is recommended for servers running applications with high levels of disk activity. The virtual hard disk file that is created initially uses the size of the virtual hard disk and does not change when data is deleted or added.
  - Dynamic expanding: This type of disk provides better use of physical storage space and is recommended for servers running applications that are not disk intensive. The virtual disk file that is created is small initially and changes as data is added.
  - Differencing: This type of disk is associated in a parent-child relationship with another disk that you want to leave intact. You can make changes to the data or operating system without affecting the parent disk, so that you can revert the changes easily. All children must have the same virtual hard disk format as the parent (VHD or VHDX).

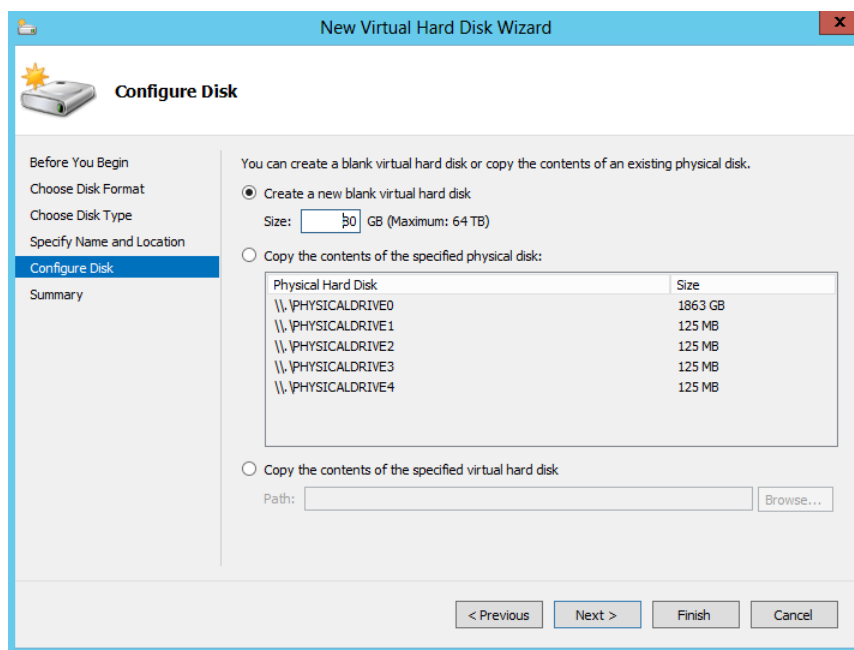
Select *Next* to continue. The *Specify Name and Location* page opens.

**Figure 29:**Specify Name and Location



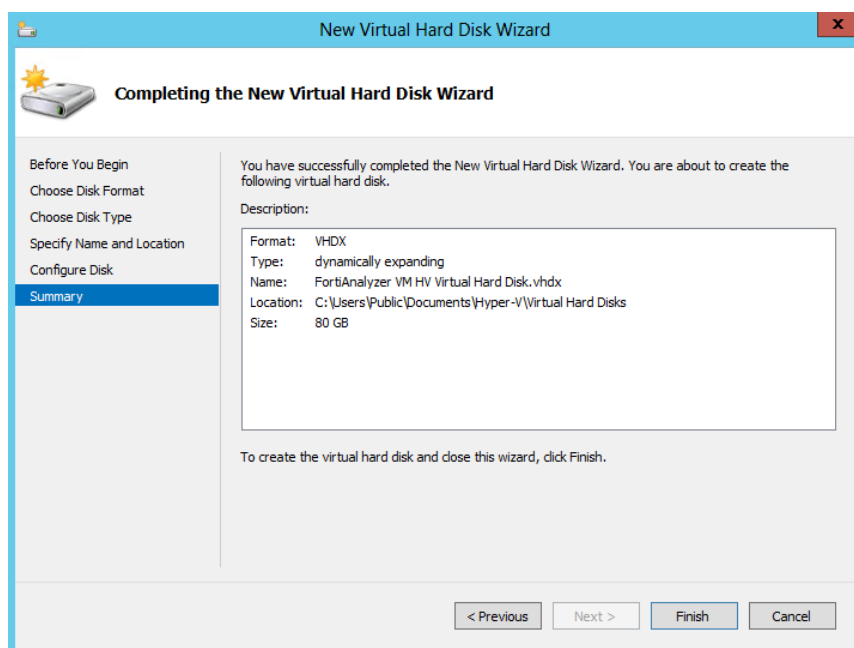
7. Specify the name and location of the virtual hard disk file. Use the *Browse* button to select a specific file folder on your server.
- Select *Next* to continue. The *Configure Disk* page opens.

**Figure 30:**Configure Disk page



8. Select to create a new blank virtual hard disk and enter the size of the disk in GB. The maximum size is dependent on your server environment.  
Select *Next* to continue. The *Summary* page opens.

**Figure 31:**Summary page

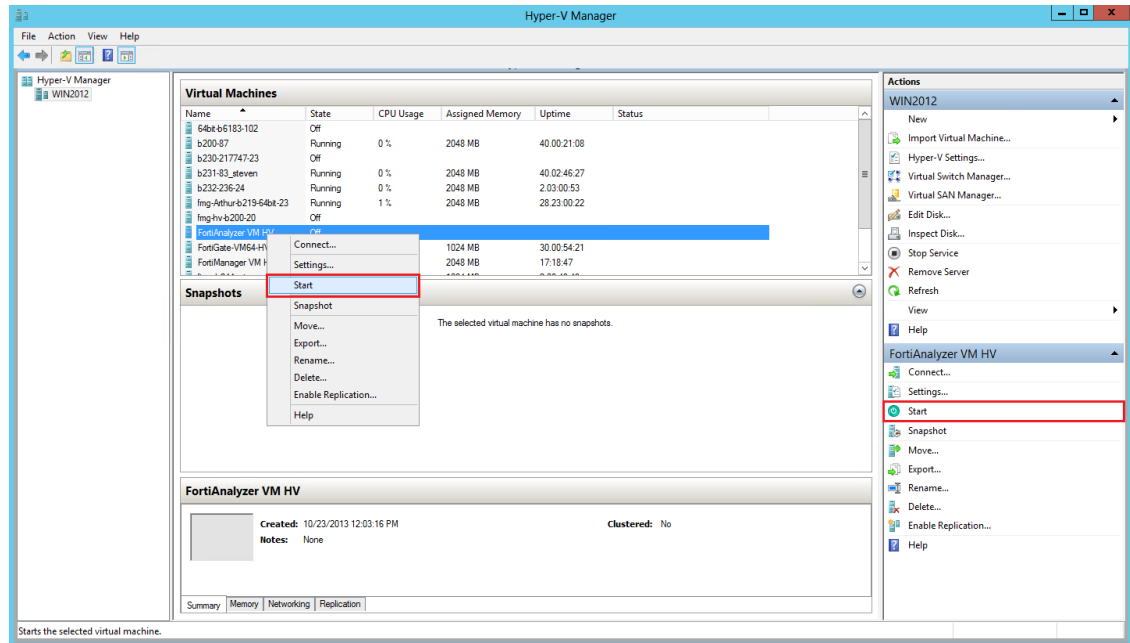


9. The summary page provides details of the virtual hard disk. Select *Finish* to create the virtual hard disk.
10. Select *Apply* to save the settings and select *OK* to exit the settings page.

## Start the FortiAnalyzer VM

You can now proceed to power on your FortiAnalyzer VM. Select the name of the FortiAnalyzer VM in the list of virtual machines, right-click, and select *Start* in the menu. Optionally, you can select the name of the FortiAnalyzer VM in the list of virtual machines and select *Start* in the *Actions* menu.

**Figure 32:**Start the FortiAnalyzer VM virtual machine



# FortiAnalyzer VM Initial Configuration

Before you can connect to the FortiAnalyzer VM Web-based Manager you must configure basic configuration via console in Microsoft Hyper-V Server. Once configured, you can connect to the FortiAnalyzer VM Web-based Manager and upload the FortiAnalyzer VM license file that you downloaded from the [Customer Service & Support](#) portal.

The following topics are included in this section:

- [FortiAnalyzer VM console access](#)
- [Connect to the FortiAnalyzer VM Web-based Manager](#)
- [Upload the FortiAnalyzer VM license file](#)
- [Configure your FortiAnalyzer VM](#)

## FortiAnalyzer VM console access

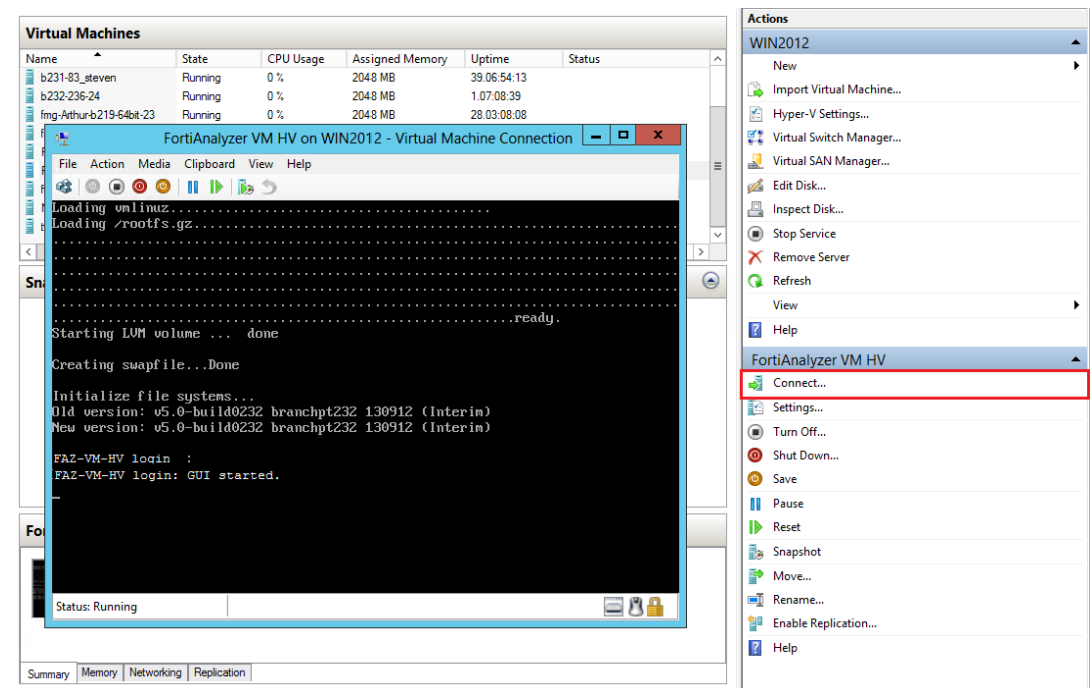
To enable Web-based Manager access to the FortiAnalyzer VM you must configure the port1 IP address and network mask of the FortiAnalyzer VM.

**To configure the port1 IP address and netmask:**

1. In the list of virtual machines, select the FortiAnalyzer VM that you deployed, right-click, and select Connect from the menu.

The *Console* window appears

**Figure 33:**FortiAnalyzer VM console access



2. At the FortiAnalyzer VM login prompt enter the user name `admin` and password. The default password is no password.
3. To configure the port1 IP address and netmask, enter the following CLI commands:

```
config system interface
  edit port1
    set ip <IP address Netmask>
  end
```



The port management interface should match the first network adapter and virtual switch that you have configured in the Microsoft Hyper-V Server virtual machine settings.

---



The Customer Service & Support portal currently does not support IPv6 for FortiAnalyzer VM license validation. You must specify an IPv4 address in both the support portal and the port management interface.

---

4. To configure the default gateway, enter the following CLI commands:

```
config system route
  edit 1
    set device port1
    set gateway <IP address Netmask>
  end
```

## Connect to the FortiAnalyzer VM Web-based Manager

Once you have configured the port1 IP address and network mask, launch a web browser and enter the IP address you configured for the port management interface. At the login page, enter the user name `admin` and password and select *Login*. The default password is no password. The Web-based Manager will appear with an *Evaluation License* dialog box, see [Figure 34](#).

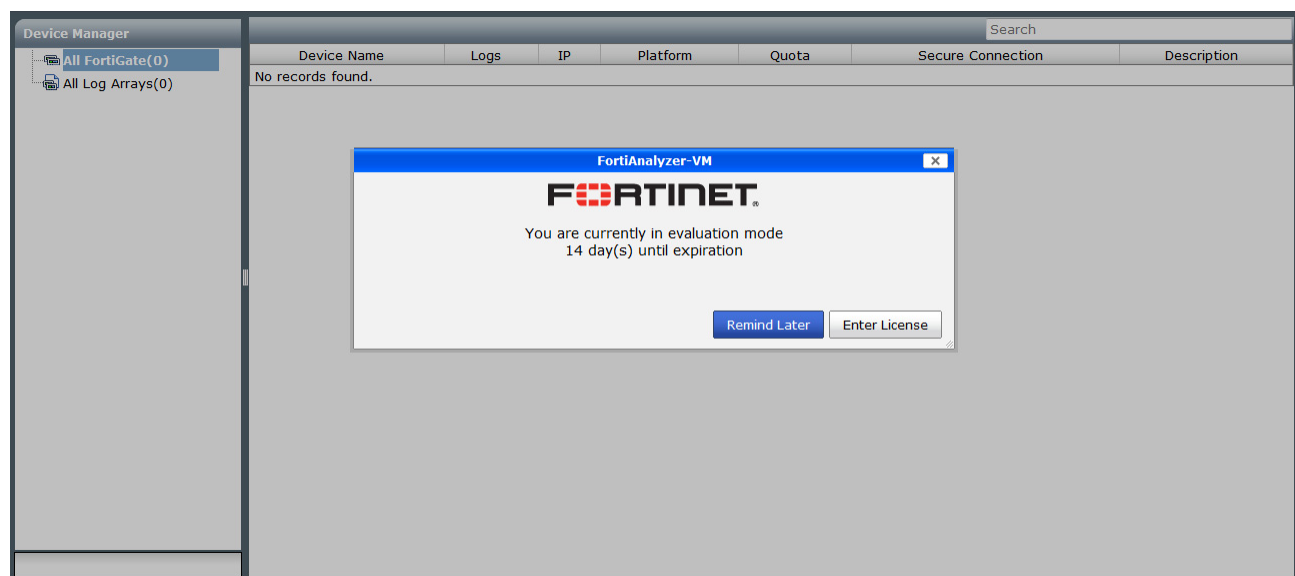
---



By default, the Web-based Manager is accessible via HTTPS.

---

**Figure 34:**Web-based Manager and Evaluation License dialog box



## Upload the FortiAnalyzer VM license file

Every Fortinet VM includes a 15-day trial license. During this time the FortiAnalyzer VM operates in evaluation mode. Before using the FortiAnalyzer VM you must enter the license file that you downloaded from the [Customer Service & Support](#) portal upon registration.

### To upload the FortiAnalyzer VM licence file:

1. In the *Evaluation License* dialog box, select *Enter License*. Optionally, select *Upload License* in the *License Information* dashboard widget.



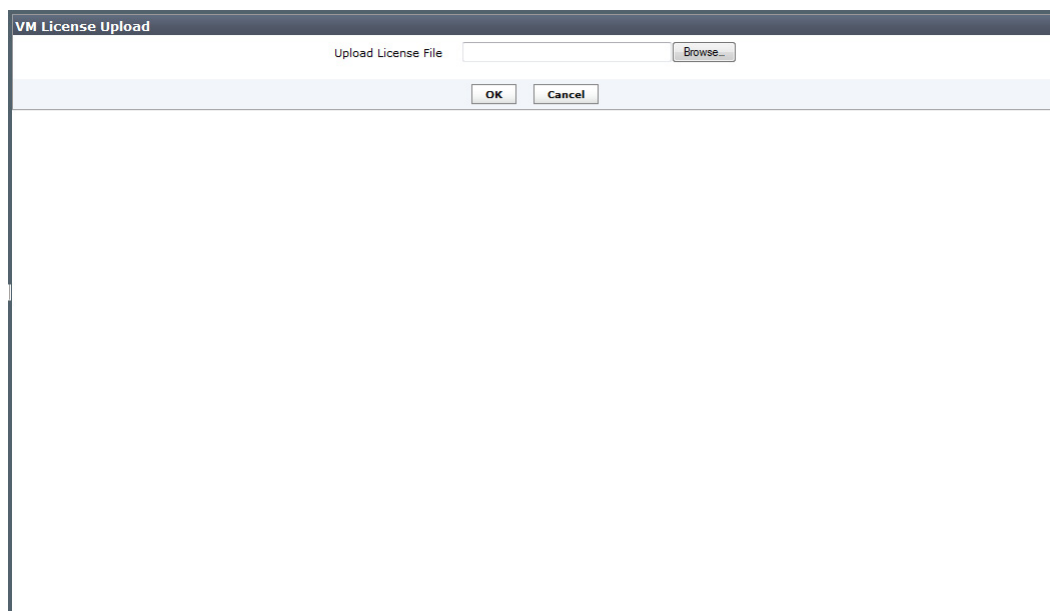
You can also upload the license file via the CLI using the following CLI command:

```
execute add-vm-license <vm license string>
```

You can open the FAZ-VM.lic license file using Wordpad or Notepad++.

The license upload page opens.

**Figure 35:**License upload page



2. Select *Browse* and locate the license file (.lic) on your management computer. Select *OK* to upload the license file.

You will receive a reboot message. The FortiAnalyzer VM system will reboot and load the license file.

3. Refresh the browser to login.
4. Enter `admin` in the Name field and select *Login*. The VM registration status appears as valid in the *License Information* widget once the license has been validated.

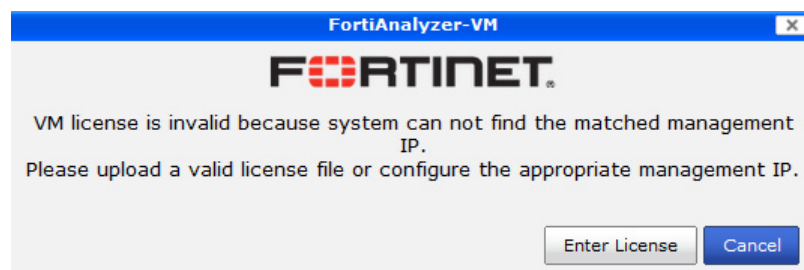


As a part of the license validation process FortiAnalyzer VM compares its IP address with the IP information in the license file. If a new license has been imported or the FortiAnalyzer's IP address has been changed, the FortiAnalyzer VM must be rebooted in order for the system to validate the change and operate with a valid license.

5. If the IP address in the license file and the IP address configured in the FortiAnalyzer VM do not match, you will receive the following error message dialog box when you log back into the VM.



**Figure 36:**VM license file is invalid dialog box



If this occurs, you will need to change the IP address in the [Customer Service & Support](#) portal to match the management IP and re-download the license file. To change the management IP address, see ["To edit the FortiAnalyzer VM IP address:"](#) on page 9.



After an invalid license file is loaded to FortiAnalyzer VM, the Web-based Manager will be locked until a valid license file is uploaded.

## Configure your FortiAnalyzer VM

Once the FortiAnalyzer VM license has been validated you can begin to configure your device. For more information on configuring your FortiAnalyzer VM, see the [FortiAnalyzer Administration Guide](#) at <http://docs.fortinet.com/>.



In VM environments, it is recommended that you clone the VM instance. In the event of an issue with the firmware upgrade, you can revert to the VM clone.

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